

NOTE REGARDING *ESCHATOMOXYS WAGNERI* BLAISDELL

In the Pan-Pacific Entomologist, Vol. XI, No. 3, 1935, I described the above remarkable Tenebrionid from a unique. A second specimen has been discovered in the collection of Mr. P. H. Timberlake of Riverside, California. I am indebted to Mr. Fred R. Platt for the following data regarding the specimen: It was collected in Painted Canyon, Riverside County, California on April 18, 1925, by Mr. Timberlake. Its appendages are partly imperfect, both antenna however being intact. The insect evidently was dead when found.—F. E. Blaisdell, Sr.

A NEW SPECIES OF MAYFLY FROM CALIFORNIA

(Ephemerida: Bætidæ)

BY W. M. UPHOLT

*Berkeley, California**Callibætis hebes* Upholt sp. nov.

Length: Body $7\frac{1}{2}$ -10 mm.; wing $7\frac{1}{2}$ -10 mm.; caudal filaments 15-20 mm.

Male dark brown, female pale tan; cross veins of fore wing few in number; marginal intercalaries paired; wing of male clear to deeply pigmented in stigmatic area and in spots along costal margin.

Male: Head and thorax blackish-brown; pale areas on pleura especially around margins; pale streaks along thoracic folds; fore legs dark brown; femur paler at tip; middle and hind legs pale tan; joints dark brown; legs with faint dark stipling.

Wings hyaline (see figure 1); cross veins moderately abundant (45 to 60 behind Radius 1); marginal intercalaries paired, some of them transparent, white, and very difficult to see; longitudinal veins dark brown except where cross veins intersect them; cross veins white except for a few dark brown ones in the apical region; cross veins of the basal half of the costal cell white and fragmentary; costal brace pale; costal angulation of hind wing rather obtuse (about 120 degree angle); cross veins numerous (about 25); three longitudinal veins; several short intercalaries between second and third.

Abdominal tergites reddish-tan with six dark brown longitudinal streaks, two on the margin and four evenly spaced over the dorsum. Considerable dark brown spotting especially laterally, gradually becoming thicker anteriorly. Two median longitudinal streaks, interrupted at the posterior margins of tergites 7 to 9. In some specimens the brown spotting and streaks become so general

as to give the abdomen the appearance of being solidly dark brown. Dark brown stippling on sternites more sparse and more evenly spaced; two rows of dark brown longitudinal streaks at anterior margin of each sternite, grading from mere spots, widely separated on sternite 1 to streaks over half the length of sternite 8 and rather close together, reduced to short dashes again in sternite 9. Forceps mottled smoky-brown. Caudal filaments white; incisures blackish-brown.

Female: Head and thorax pale tan, margins of thoracic nota darker reddish-brown; scutellum yellow. Hind legs pale, spotted with dark brown. An irregular row of round brown spots along femora.

Wings hyaline; cross veins fewer than in male (35 to 45 behind Radius 1). Costa extending around outer margin of wing, brown at ends of major convex veins and white at end of major concave veins. Fore wing irregularly mottled with reddish-brown along the costal border. Costal brace pale medially and dark at each end; numerous brown triangles extending from costa into costal cell, in some cases forming a band from costa to subcosta; bands thicker and more irregular toward apex. Six irregular clouds extending between subcosta and Radius 2, two middle ones much the largest. Clouding in right and left wings differing in more minute details and showing considerable variation among different specimens. Hind wings similar to male but with fewer crossveins. The basal pigmentation does not extend into costal angulation as in *Callibaetis hageni* Eaton, (see fig. 2).

Abdomen pale smoky grey; tergites 1, 3, 4, 7, and 8, largely dark brown, others with two brown spots on anterior margin, and sparsely speckled with brown. Sternites sparsely speckled with brown, each sternite with a pair of larger brown spots located medianly. Caudal filaments smoky brown, darker distally with blackish-brown incisures; alternate joinings wider at the base. Coloration of abdomen more reddish-brown and with less distinct markings in those dried specimens in which the abdomen contains eggs.

Male subimago: Wings uniformly smoky grey, cross veins not margined with white as in *Callibaetis hageni* Eaton. Outer and anal margins short-fringed.

Mature nymph: Somewhat smaller than in *C. hageni* Eaton (9-10 mm.) but very similar in mouthparts and gills. Femora differ in having no median line or preapical brown band as in *C. hageni*.

Holotype: Male. Body 9; wing $9\frac{1}{2}$ mm. Alpine Dam, Marin Co., Calif., October 6, 1935. (No. 4197 in California Academy of Sciences).

Allotype: Female. Abdomen shrunken; wing 9 mm. Same data as holotype. (No. 4198 in California Academy of Sciences).

Paratypes: 63 ♂ imagos, 5 ♀ imagos, 1 ♂ subimago, 5 nymphs, same data as holotype; 3 ♂ imagos, 2 ♀ imagos, Strawberry Canyon, Berkeley, Calif., October 7-8, 1935.

The male imago is separable from *Callibætis hageni* Eaton by its smaller size and paler sternites, as well as in the general coloration of its abdomen which is too variable to be a reliable characteristic.

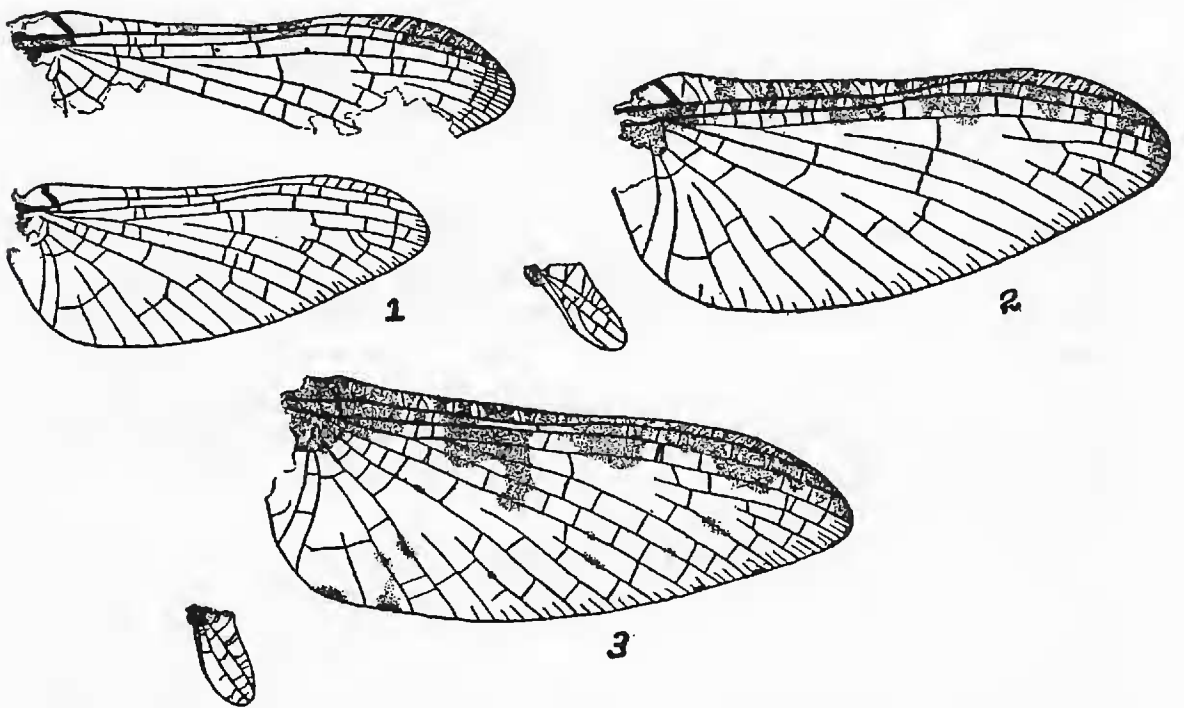


Figure 1. *Callibætis hebes*, n. sp. Fore wing of male imago; fig. 2, same, wings of female imago; fig. 3, *Callibætis hageni* Eaton, wings of female imago.

The female imago is readily separable from *C. hageni* by its smaller size, the reduced pigmentation along the costal border of wings, and the complete absence of pigmentation in basal costal space and on the disc of fore wing (See figures 2 and 3.) Coloration of body is also different being more like *C. pacificus* Seemann, though I do not like to rely upon this character since it is so difficult to describe accurately.

This species is named *hebes* in reference to its faint cross veins and marginal intercalaries which are easily overlooked because of this characteristic.